National Starch & Chemical Co.	**)**	**DEPARTMENTAL**
Aroostook County	**)**	**FINDINGS OF FACT AND ORDER**
Island Falls, Maine	**)**	**AIR EMISSION LICENSE**
A-274-71-I-R	**)**	

After review of the air emissions license application, staff investigation reports and other documents in the applicant's file in the Bureau of Air Quality, pursuant to 38 M.R.S.A., Section 344 and Section 590, the Department finds the following facts:

I. REGISTRATION

A. Introduction

National Starch & Chemical Company (National Starch) of Island Falls, Maine was issued Air Emission License A-274-73-D-A/R on June 29, 1993 permitting the operation of emission sources associated with their facility. The license was subsequently amended on September 15, 1993 (A-274-73-E-M), on August 22, 1996 (A-274-71 F-M), on July 1, 1996 (A-274-71-G-M) and on June 29, 1999 (A-274-71-H-M).

B. Emission Equipment

National Starch is authorized to operate the following air emission units:

Fuel Burning Equipment

Equipment	Date of Construction	Maximum Capacity (MMBtu/hr)	Fuel Type, %Sulfur	Maximum Firing Rate (i.e. gal/hr)	Stack #
Boiler #1	1985	17.6	#6 Oil, 0.7	116 gph	1
		17.6	#2 Oil, 0.5	126 gph	
		20.4	Wood, Shredded Paper, Starch	2,520 lb/hr (10% moist.)	
Boiler #2	1968	13.4	#6 Oil, 0.7	88 gph	2
			#2 Oil, 0.5	95 gph	
Boiler #3*	1974	0.8	#2 Oil, 0.5	5.7	3
Boiler #4	1963	15.6	#6 Oil, 0.7	103	18
			#2 Oil, 0.5	110 gph	
Emergency Generator *		0.31		2.3 gph	

*National Starch operates fuel burning units which have heat input capacities less than 1.0 MMBtu/hr and a 0.31 MMBtu/hr backup diesel generator (less than the 0.5 MMBtu/hr lower limit) and are therefore noted for inventory purposes only.

Process Equipment

		Process Weight Rate	Controls	Stack #
1.	Starch Pneumatic Conveyor	2.0 tph	baghouse	4
2.	Starch Drum Dryer, #1 Drum	1.5 tph	none	5a
3.	Starch Drum Dryer, #2 Drum	1.5 tph	none	5b
4.	Starch Drum Dryer, #3 Drum	1.5 tph	none	5c
5.	Starch Drum Dryer, #4 Drum	1.5 tph	none	5d
6.	Starch Drum Dryer, #6 Drum	1.5 tph	none	5f
7.	Starch Drum Dryer, #7 Drum	0.6 tph	none	19
8.	Starch Drum Dryer, #8 Drum	0.6 tph	none	20
9.	Starch Drum Dryer, #9 Drum	0.6 tph	none	21
10.	Starch Pneumatic Conveyor, Pregel "A" System	1.80 tph	cyclone/baghouse	6
11.	Starch Pneumatic Conveyor, Pregel "B" System	1.80 tph	cyclone/baghouse	7
12.	Starch Pneumatic Conveyor, Pregel "C" System	1.80 tph	cyclone/baghouse	12
13.	Food Grade Starch Dryer	0.80 tph	cyclone/baghouse	10
14.	Starch Dryer (Dextrin, Top Converter)	0.75 tph	baghouse	11a
15.	Starch Dryer (Dextrin, Bottom Converter)	0.75 tph	baghouse	11b
16.	Starch Ribbon Blending	1.80 tph	baghouse	15
17.	Dextrin Starch Dumping	0.75 tph	baghouse	16
18.	Starch Pneumatic Conveyor	0.8 tph	baghouse	17

C. Application Classification

The application for National Starch does not include the licensing of increased emissions or the installation of new or modified equipment, therefore the license is considered to be a renewal of current licensed emission units only.

II. BEST PRACTICAL TREATMENT (BPT)

A. Introduction

In order to receive a license the applicant must control emissions from each unit to a level considered by the Department to represent Best Practical Treatment (BPT), as defined in Chapter 100 of the Air Regulations. Separate control requirement categories exist for new and existing equipment as well as for those sources located in designated non-attainment areas.

BPT for existing emissions equipment means that method which controls or reduces emissions to the lowest possible level considering:

- the existing state of technology;
- the effectiveness of available alternatives for reducing emission from the source being considered; and
- the economic feasibility for the type of establishment involved.

B. Process Source Description

National Starch has three product lines: Dextrin, a sugar-enhanced starch; Food/Industrial starch; and Pregel Starch. All three products are made from raw tapioca starch from Thailand and a limited amount of corn starch from the Midwestern United States. The three products are all shipped as dry, bagged starch.

1. Dextrin Starch

The Dextrin line starts with bags of raw starch being emptied into a receiving hopper. Dust from the hopper is collected by the Dextrin dumping control baghouse (vent #17). Due to the nature of its use, this is an intermittent source, typically operating under load less than four hours per day. Daily documentation of operation is made and kept on file by the source. The "catch" from all the baghouses and cyclones used at this facility is returned to the process.

The Dextrin starch from the hopper is pneumatically conveyed to another hopper located at the top of a tower, which consists of three ribbon blenders. The transport air is controlled by the #16 baghouse. The starch is first dropped into the top ribbon blender known as the predryer blender which vents through a baghouse (vent #11b). The converter discharges to the third bottom ribbon blender, known as the cooler, which then feeds the packaging station. The cooler vent and the packaging station dust collector vent through the #16 baghouse.

2. The Food/Industrial and Pregel Starch
   The Food/Industrial and the Pregel starch lines have a common starting point at the dump tank area. Raw starch is dumped from bulk bags into the tanks, where the starch is slurried with water. A baghouse controls fugitive dust emissions from the intermittent source, typically operating under load less than four hours per day. Daily documentation of operation is made and kept on file by the source.

   The starch slurry is transported to one or more of the seven reactor vessels, where it is typically treated with HCl, caustic (NaOH), and propylene oxide to adjust the starch characteristics. Small quantities of other additives are used as necessary for the desired starch adjustment. The seven reactor vessels vent to roof exhausts. The slurry is then discharged to a wash and filter station using an EMICO vacuum filter. After this filter, the Food/Industrial and Pregel lines separate.

   The reactor vessels discussed above are purged with N_2 prior to charging with starch slurry. An N_2 blanket is maintained over the slurry to minimize the explosion hazard from the propylene oxide. During the reaction process, the propylene oxide, NaOH and HCl are incorporated into the final product.

   a. Food/Industrial Starch
      From the EMICO filter, the Food/Industrial line proceeds to a rotary kiln steam heated dryer. This dryer exhausts through a cyclone and a baghouse (vent #10). The dried starch is pneumatically conveyed to the mill, where it is milled and screened to final specifications, and then it is conveyed to packaging. A baghouse controls the emissions from the pneumatic system, the milling, the screening, and local dust pickup at packaging (vent #17).

   b. Pregel Starch
      In contrast, the Pregel starch line utilizes the slurry from the EMICO filter which is fed to the Pregel holding tanks. The Pregel starch slurry from the holding tanks then feeds several steam heated surface rotary drum dryers.

      The slurry is dried on one of the drum dryers (vents #5a-d, f, 19, 20, or 21).

      The starch is removed from the drums as a thin sheet, which is pneumatically conveyed to the milling and sifting operations and finally to packaging. Baghouses control the pneumatic transfer, milling, and screening associated with the single drum dryers (vents #6, #7, and #12).

Finally, a baghouse (vent #15) controls particulate emissions from a ribbon blending process, which is used in the packaging process of the Pregel. This blending is for product adjustment to meet desired starch specifications.

Throughout these processes, there are starch losses from various operations as well as from the washing of equipment. These starches are carried in a waste transport system to a lagoon for treatment. The settleable solid starch is defined as the primary waste starch.

The liquid from the primary settling process is treated with aerobic organisms to biologically digest soluble starches. After digestion, the biomass is flocculated with aluminum sulfate, and then a waste treatment polymer containing no heavy metals is used to float the flocs. The biomass is removed through an overflow at about 5% solids and is burned in the #1 boiler.

Other than the treatment plant additives and the chemicals used in the adjustment of raw starch into industrial and food grade starches, there is nothing in the primary and secondary wastes other than starch.

C. Process Emission Sources

The BPT analysis conducted for non-boiler type emissions deals with particulate emissions for the various starch manufacturing processes. Comparisons were made of existing control equipment against various alternatives including the top case Best Available Control Technology (BACT), based upon impacts on the environment, energy, and economics.

National Starch's own processes set minimum emissions standards due to the saleable nature of the emissions as collected, and therefore the analysis demonstrates that in many cases, the existing base control methods are BACT.

In the starch manufacturing industry, cyclones and fabric filters are typically used for particulate control. Because cyclones alone are inadequate to meet National Starch's standards, the more efficient fabric filters are used. In very high loading cases, cyclones are placed in series with a fabric filter to reduce the loading to the filter and allow the use of smaller, more economically sized fabric filters.

BPT is accepted for all process sources with baghouse and/or baghouse-cyclone controls and visible emissions limited to 5% opacity on a six (6) minute block average basis.

For the drum vents (vents #5a-d, f, #19, #20, and #21), the high water contents of the exhaust gases render the use of cyclones or fabric filters ineffective. Electrostatic precipitators would also be ineffective, since the electric charge used to collect particles is too readily dissipated by the water, and the bulk of the pollutant is dissolved in the water, not allowing collection. The only technically feasible control method, a wet scrubber, was rejected based on the low particulate emission rate from these eight sources, with an average of 0.16 lb/hr from each point source; consideration of disposal of the waste stream that would be generated by a wet scrubber; and energy and economic impacts. Thus, these sources, with no additional controls, are considered to be receiving BPT for vents #5a-5f and BACT for vents #19, #20, and #21. Visible emissions from these vents is limited to 5% opacity on a six (6) minute block average basis, excluding water vapor.

D. Boiler #1

Boiler #1 is a York-Shipley fluidized bed combustion boiler, manufactured in 1985, prior to new source performance standards (NSPS). The #1 boiler has two separate chambers. The lower chamber is rated at 20.4 MMBtu/hr, firing wood, waste starch and shredded paper. The lower chamber is also equipped with an auxiliary burner, rated at 7.0 MMBtu/hr, which fires #2 oil and is used for startup purposes to heat the boiler bed to wood combustion temperatures. The upper secondary chamber of the #1 boiler is rated at 17.6 MMBtu/hr, firing #6 or #2 fuel oil. The #1 boiler can not fire wood and #6 oil at the same time.

BPT for Boiler #1 is the following:

- Emission rates for PM are regulated by MEDEP Regulations, Chapter 103.
- SO_2, NO_x, CO and VOC emission rates are based on AP-42 data dated 9/98 for oil fired boilers firing #6 fuel (0.7% sulfur) and having a heat input of 10 to 100 MMBtu/hr.
- The use of a multiple cyclone collector.
- Stack #1 shall be at least 67 feet above ground level (AGL).
- Opacity from Stack #1 shall not exceed 30% on a 6 minute block average, except for no more than 2 six minute block averages in a 3 hour period.

E. Boiler #2

Boiler #2 is a William-Davis, fire tube, Scotch Marine boiler manufactured in 1968, prior to NSPS, and rated at 13.4 MMBtu/hr. Boiler #2 may fire 0.7% sulfur #6 fuel oil or fire #2 fuel oil with a sulfur content not to exceed 0.5% sulfur by weight.

BPT for Boiler #2 is the following:

- SO_2, NO_x, CO and VOC emission rates are based on AP-42 data dated 9/98 for oil fired boilers firing #6 fuel (0.7% sulfur) and having a heat input of 10 to 100 MMBtu/hr.
- Emission rates for PM are regulated by MEDEP Regulations, Chapter 103.
- Stack #2 shall be at least 67 feet AGL.
- Opacity from Stack #2 shall not exceed 30% on a 6 minute block average, except for no more than 2 six minute block averages in a 3 hour period.

F. Boiler #4

Boiler #4 is a Cleaver Brooks, #6 or #2 oil fired boiler, manufactured in 1963, prior to NSPS, and rated at 15.6 MMBtu/hr. Boiler #4 may fire #6 fuel oil with a maximum sulfur content of 0.7% by weight or fire #2 fuel oil with a sulfur content not to exceed 0.5% sulfur by weight.

BPT for Boiler #4 is the following:

- SO_2, NO_x, CO and VOC emission rates are based on AP-42 data dated 9/98 for oil fired boilers firing #6 fuel (0.7% sulfur) and having a heat input of 10 to 100 MMBtu/hr.
- Emission rates for PM are regulated by MEDEP Regulations, Chapter 103.
- Stack #18 shall be at least 55.75 feet AGL.
- Opacity from Stack #18 shall not exceed 30% on a 6 minute block average, except for no more than 2 six minute block averages in a 3 hour period.

G. Facility Emissions and Fuel Use Caps

The following total licensed annual emissions for National Starch are based on the following raw materials used. All usages are based on a 12 month rolling total.

- 11,031 tons/year of wood/starch/shredded waste (8100 Btu/lb, 10% moisture), or equivalent, in Boiler #1. This is based on operating 8,760 hours per year.
- 704,000 gallons per year of #6 fuel (0.7%S maximum by weight) facility wide.
- 70,000 gallons per year of #2 fuel (0.5%S maximum by weight) facility wide.

Total Allowable Annual Emissions for the Facility
(used to calculate the annual license fee)

Pollutant	Tons/year
PM	18.1
PM_{10}	18.1
SO_2	41.9
NO_x	45.8
CO	12.7
VOC	2.3

IV. AMBIENT AIR QUALITY ANALYSIS

A. Overview

A combination of screening and refined modeling was performed to show that emissions from National Starch, Inc. of Island Falls, would not cause or contribute to violations of Maine Ambient Air Quality Standards (MAAQS) for SO_2, PM_{10}, NO_2 and CO. MEDEP-BAQ determined that National Starch's facility does not consume increment because current emissions are below baseline emissions for all pollutants. Therefore, no increment analyses were performed.

B. Model Inputs

The SCREEN3 model was used to determine the worst-case operating load and the SO_2, PM_{10}, NO_2 and CO significant impact areas.

The ISCPRIME model was used in refined simple terrain mode to address standards in all areas including the cavity region. In addition, the COMPLEX-I VALLEY (CI-VM) model was used to evaluate impacts in intermediate and complex terrain, i.e., areas where terrain elevations exceed the proposed stack-top elevations.

All modeling was performed in accordance with all applicable requirements of the Maine Department of Environmental Protection, Bureau of Air Quality (MEDEP-BAQ) and the United States Environmental Protection Agency (USEPA).

A valid five (5) year hourly meteorological off-site database was used for the refined modeling. The wind data was collected at a height of ten (10) meters at the Caribou National Weather Service (NWS) meteorological site during the five (5) year period 1985-1989. Missing data were interpolated or coded as missing. Surface data collected at Loring Air Force Base were substituted for missing data. Hourly cloud cover, ceiling height and surface wind speed from Caribou NWS

were used to calculate stability. Hourly mixing heights were derived from surface and upper air data collected at Caribou NWS station.

Stack parameters used in the modeling for National Starch's proposed facility are listed in Table IV-1. Because National Starch was not able to meet MAAQS using their current configuration, National Starch was modeled with higher stack heights for two of its stacks, see below. The modeling analyses accounted for the potential of building wake effects on emissions from all modeled stacks that are below their respective formula GEP stack heights.

Modeling analyses were conducted for two operating scenarios: Boiler #1 firing biomass, and Boiler #1 firing oil each with boilers #2 and #4. Boiler #2 has been shut down due to a breakdown. This boiler will not be repaired as National Starch plans to replace the boiler. Stack #2's parameters were included in the modeling to represent National Starch's intended operation scenarios. When National Starch replaces Boiler #2, modeling may need to be conducted to ensure compliance depending on parameters for the Boiler #2 replacement.

Table IV-1. Stack Parameters

Facility/Stack	Stack Base Elev. (m)	Stack Ht. (m)	GEP Stack Ht. (m)	Stack Dia. (m)	UTM E (km)	UTM N (km)
CURRENT/PROPOSED						
Stack #1 – Boiler #1 – York Shipley firing Biomass	138.68	20.40	24.37	0.70	556.230	5094.930
Stack #1 – Boiler #1 – York Shipley firing Oil	138.68	20.40	24.37	0.70	556.230	5094.930
Stack #2 – Boiler #2 (raised to 20.4m)	138.68	20.40	32.80	0.61	556.260	5094.950
Stack #18 – Boiler #4 – Cleaver Brooks (raised to 17m)	138.68	17.00	24.37	0.51	556.230	5094.950

Emission parameters for National Starch's facility for MAAQS modeling are listed in Table IV-2. Emission parameters for National Starch's facility are based on the maximum license allowed operating configuration. For the purpose of determining NO_2 and PM_{10} impacts, all NO_x and PM emissions were conservatively assumed to convert to NO_2 and PM_{10}, respectively.

Table IV-2. Emission Parameters

Facility/ Stack	Operating Scenario	SO_2 (g/s)	PM_{10} (g/s)	NO_2 (g/s)	CO (g/s)	Temp (K)	Stack Vel. (m/s)
Stack #1 – Boiler #1 – York Shipley firing Biomass	Max Biomass	0.026	0.643	1.157	0.617	449.8	8.99
Stack #1 – Boiler #1 – York Shipley firing Oil	Max Oil	1.619	0.266	0.998	0.067	449.8	6.57
Stack #2 – Boiler #2 – to be replaced	Max Oil/ Biomass	1.233	0.253	0.760	0.051	449.8	6.57
Stack #18 – Boiler #4 – Cleaver Brooks	Max Oil/ Biomass	1.435	0.236	0.885	0.059	449.8	11.01

C. Applicant's modeled impacts.

SCREEN3 modeling analyses were performed for the maximum, typical (75% of maximum operating case emission and stack velocity) and minimum (50% of maximum operating case emission and stack velocity) operating cases for National Starch alone. It was demonstrated that the maximum operating load case would result in maximum impacts in simple, intermediate, and complex terrain; thus the typical and minimum load cases were not examined further. No further modeling analysis was needed for CO because maximum 1-hour and 8-hour CO SCREEN3 impacts were well below their respective significance levels.

ISCPRIME refined, using all five years of meteorological data, and CI-VM screening modeling were then performed for the operating scenarios outlined above. All SO_2, PM_{10}, and NO_2 averaging periods were significant in both modeling analyses. Both CO averaging periods were insignificant in SCREEN3. The model results for National Starch are shown in Table IV-3.

Table IV-3. Maximum Predicted Impacts

Pollutant	Averaging Period	Operating Scenario	Maximum Impact Simple Terrain (µg/m³)	Operating Scenario	Maximum Impact Complex Terrain (µg/m³)	Class II Significance Level (µg/m³)
SO_2	3-hour	Max Oil	**330.00**	Max Oil	**109.98**	**25**
	24-hour	Max Oil	**146.86**	Max Oil	**30.55**	**5**
	Annual	Max Oil	**17.03**	Max Oil	**9.78**	**1**
PM_{10}	24-hour	Max Biomass	**33.13**	Max Biomass	**7.56**	**5**
	Annual	Max Biomass	**3.48**	Max Biomass	**2.42**	**1**
NO_2	Annual	Max Oil	**10.50**	Max Biomass	**6.08**	**1**
CO	1-hour	Max Biomass	151.97*			**2000**
	8-hour	Max Biomass	106.36*			**500**

Key: * SCREEN3, Shaded areas – not modeled

D. Combined Source Modeling

Because modeled impacts from National Starch's facility were greater than significance levels for all SO_2, PM_{10}, and NO_2 averaging periods, other sources not explicitly included in the modeling analysis must be included by using representative background concentrations for the area. Background concentrations used were based on conservative northern Maine rural background monitoring data for SO_2 from data collected in the Dedham area (Bald Mountain Site), from data collected for PM_{10} from the Bald Mountain site, and from data collected for NO_2 from the Portland area (PEOPL Site). These background values are listed in Table IV-4.

TABLE IV-4. Background Concentrations (µg/m³)

Pollutant	Averaging Period	Background
SO_2	3-hour	52
	24-hour	29
	Annual	5
PM_{10}	24-hour	35
	Annual	15
NO_2	Annual	11

MEDEP-BAQ determined that there were no other sources whose impacts would potentially be significant in the applicant's significant impact area.

ISCPRIME refined, using all five years of meteorological data, and CI-VM screening modeling were then performed for the following operating scenarios: Boiler #1 firing Oil and Boiler #1 firing Biomass. The combined source model results for simple and complex terrain are shown in Tables IV-5 & IV-6,

respectively. All combined SO_2, PM_{10} and NO_2 averaging period impacts from National Starch's proposed facility including background were below their respective MAAQS.

Table IV-5. Maximum Predicted Impacts in Simple terrain

Pollutant	Averaging Period	ISCPRIME Max Impact (µg/m³)	Receptor UTM E (km)	Receptor UTM N (km)	Receptor Elevation (m)	Back-ground (µg/m³)	Max Total Impact (µg/m³)	MAAQS (µg/m³)
SO_2	3-hour	330.00*	555.500	5093.500	158.5	52	382.00	**1150**
	24-hour	146.86*	556.275	5094.744	140.20	29	175.86	**230**
	Annual	17.03*	556.500	5094.750	146.30	5	22.03	**57**
PM_{10}	24-hour	33.13**	556.275	5094.744	140.20	35	68.13	**150**
	Annual	3.48**	556.500	5094.750	146.30	15	18.48	**40**
NO_2	Annual	10.50*	556.500	5094.750	146.30	11	21.50	**100**

Key: *Boiler #1 burning oil, ** Boiler #1 burning biomass

Table IV-6. Maximum Predicted Impacts in Complex terrain

Pollutant	Averaging Period	CI-VM Max Impact (µg/m³)	Receptor UTM E (km)	Receptor UTM N (km)	Receptor Elevation (m)	Back-ground (µg/m³)	Max Total Impact (µg/m³)	MAAQS (µg/m³)
SO_2	3-hour	109.98*	554.960	5094.730	170.7	52	161.98	**1150**
	24-hour	30.55*	554.960	5094.730	170.7	29	59.55	**230**
	Annual	9.78*	554.960	5094.730	170.7	5	14.78	**57**
PM_{10}	24-hour	7.56**	554.910	5094.700	173.7	35	42.56	**150**
	Annual	2.42**	554.910	5094.700	173.7	15	17.24	**40**
NO_2	Annual	6.08**	554.910	5094.700	173.7	11	17.08	**100**

Key: *Boiler #1 burning oil, ** Boiler #1 burning biomass

E. Summary

In summary, it has been demonstrated that National Starch's facility in its proposed configuration will not cause or contribute to a violation of any SO_2, PM_{10}, NO_2 or CO averaging period MAAQS.

National Starch & Chemical Co.	**)**	**DEPARTMENTAL**
Aroostook County	**)**	**FINDINGS OF FACT AND ORDER**
Island Falls, Maine	**)**	**AIR EMISSION LICENSE**
A-274-71-I-R	**13**	

ORDER

Based on the above Findings and subject to conditions listed below the Department concludes that the emissions from this source:

- will receive Best Practical Treatment,
- will not violate applicable emission standards,
- will not violate applicable ambient air quality standards in conjunction with emissions from other sources.

The Department hereby grants Air Emission License A-274-71-I-M/R, subject to the following conditions:

(1) Employees and authorized representatives of the Department shall be allowed access to the licensee's premises during business hours, or any time during which any emissions units are in operation, and at such other times as the Department deems necessary for the purpose of performing tests, collecting samples, conducting inspections, or examining and copying records relating to emissions.

(2) The licensee shall acquire a new or amended air emission license prior to commencing construction of a modification, unless specifically provided for in Chapter 115.

(3) Approval to construct shall become invalid if the source has not commenced construction within eighteen (18) months after receipt of such approval or if construction is discontinued for a period of eighteen (18) months or more. The Department may extend this time period upon a satisfactory showing that an extension is justified, but may condition such extension upon a review of either the control technology analysis or the ambient air quality standards analysis, or both.

(4) The licensee shall establish and maintain a continuing program of best management practices for suppression of fugitive particulate matter during any period of construction, reconstruction, or operation which may result in fugitive dust, and shall submit a description of the program to the Department upon request.

(5) The licensee shall pay the annual air emission license fee to the Department, calculated pursuant to Title 38 MRSA §353.

(6) The license does not convey any property rights of any sort, or any exclusive privilege.

(7) The licensee shall maintain and operate all emission units and air pollution control systems required by the air emission license in a manner consistent with good air pollution control practice for minimizing emissions.

(8) The licensee shall maintain sufficient records, to accurately document compliance with emission standards and license conditions and shall maintain such records for a minimum of six (6) years. The records shall be submitted to the Department upon written request.

(9) The licensee shall comply with all terms and conditions of the air emission license. The filing of an appeal by the licensee, the notification of planned changes or anticipated noncompliance by the licensee, or the filing of an application by the licensee for the renewal of a license or amendment shall not stay any condition of the license.

(10) The licensee may not use as a defense in an enforcement action that the disruption, cessation, or reduction of licensed operations would have been necessary in order to maintain compliance with the conditions of the air emission license.

(11) In accordance with the Department's air emission compliance test protocol and 40 CFR Part 60 or other method approved or required by the Department, the licensee shall:

(i) perform stack testing to demonstrate compliance with the applicable emission standards under circumstances representative of the facility's normal process and operating conditions:

a. within sixty (60) calendar days of receipt of a notification to test from the Department or EPA, if visible emissions, equipment operating parameters, staff inspection, air monitoring or other cause indicate to the Department that equipment may be operating out of compliance with emission standards or license conditions; or
b. pursuant to any other requirement of this license to perform stack testing.

(ii) install or make provisions to install test ports that meet the criteria of 40 CFR Part 60, Appendix A, and test platforms, if necessary, and other accommodations necessary to allow emission testing; and

(iii) submit a written report to the Department within thirty (30) days from date of test completion.

(12) If the results of a stack test performed under circumstances representative of the facility's normal process and operating conditions indicate emissions in excess of the applicable standards, then:

(i) within thirty (30) days following receipt of such test results, the licensee shall re-test the non-complying emission source under circumstances representative of the facility's normal process and operating conditions and in accordance with the Department's air emission compliance test protocol and 40 CFR Part 60 or other method approved or required by the Department; and

(ii) the days of violation shall be presumed to include the date of stack test and each and every day of operation thereafter until compliance is demonstrated under normal and representative process and operating conditions, except to the extent that the facility can prove to the satisfaction of the Department that there were intervening days during which no violation occurred or that the violation was not continuing in nature; and

(iii) the licensee may, upon the approval of the Department following the successful demonstration of compliance at alternative load conditions, operate under such alternative load conditions on an interim basis prior to a demonstration of compliance under normal and representative process and operating conditions.

(13) Notwithstanding any other provision in the State Implementation Plan approved by the EPA or Section 114(a) of the CAA, any credible evidence may be used for the purpose of establishing whether a person has violated or is in violation of any statute, regulation, or Part 70 license requirement.

(14) The licensee shall maintain records of malfunctions, failures, downtime, and any other similar change in operation of air pollution control systems or the emissions unit itself that would affect emissions and that is not consistent with the terms and conditions of the air emission license. The licensee shall notify the Department within two (2) days or the next state working day, whichever is later, of such occasions where such changes result in an increase of emissions. The licensee shall report all excess emissions in the units of the applicable emission limitation.

(15) Upon written request of the Department, the licensee shall establish and maintain such records, make such reports, install, use and maintain such monitoring equipment, sample such emissions (in accordance with such methods, at such locations, at such intervals, and in such manner as the Department shall prescribe), and provide other information as the Department may reasonably require to determine the licensee's compliance status.

(16) **Boiler #1**

A. The auxiliary burner shall fire only #2 oil, 0.5% sulfur by weight, for startup purposes to heat the boiler bed to wood combustion temperatures.

B. The primary oil burner shall fire #6 oil, with a maximum sulfur content of 0.7%, or #2 fuel oil, with a maximum sulfur content of 0.5% sulfur by weight.

C. The maximum feed rate of primary and secondary waste starch is up to 1/3 on a weight basis (840 lb/hr). Waste starch feed rate shall be controlled by micro processor and compliance shall be based on a strip chart (periodic monitor) documenting the mass of waste starch and wood/paper fired in the boiler.

D. Boiler #1 shall not fire wood/starch/shredded starch and #6 oil at the same time.

E. Emissions from Boiler #1 shall not exceed the following while firing oil alone:

Pollutant	lb/MMBtu	lb/hr
PM	0.12	2.11
PM_{10}	n/a	2.11
SO_2	n/a	12.85
NO_X	n/a	7.92
CO	n/a	0.53
VOC	n/a	0.18

F. Emissions from Boiler #1 shall not exceed the following while firing wood, shredded paper or waste starch (8100 Btu/lb at 10% moisture) and oil:

Pollutant	lb/MMBtu	lb/hr
PM	0.25	5.10
PM_{10}	n/a	5.10
SO_2	n/a	0.20
NO_X	n/a	9.18
CO	n/a	4.90
VOC	n/a	1.02

G. Boiler #1 shall utilize a multiple cyclone collector to control particulate matter emissions.

H. Opacity of emissions from Boiler #1 stack (Stack #1) shall not exceed 30% on a six (6) minute block average basis, except for two (2) six (6) minute block averages in a 3-hour period.

I. Emissions from Boiler #1 shall vent through Stack #1 which is 67 ft. AGL.

(17) **Boiler #2**

A. Boiler #2 shall only fire #6 oil with a maximum sulfur content of 0.7% by weight or #2 fuel oil with a sulfur content not to exceed 0.5% by weight.

B. Emissions from Boiler #2 shall not exceed the following:

Pollutant	lb/MMBtu	lb/hr
PM	0.15	2.01
PM_{10}	n/a	2.01
SO_2	n/a	9.78
NO_X	n/a	6.03
CO	n/a	0.40
VOC	n/a	0.13

C. Opacity of emissions from the #2 boiler stack shall not exceed 30% on a six (6) minute block average basis, except for two (2) six (6) minute block averages in a 3-hour period.

D. Boiler #2 shall vent through Stack #2 which shall be 67 ft AGL by June 30, 2001.

(18) **Boiler #4**

A. Boiler #4 shall only fire #6 fuel with a maximum sulfur content of 0.7% by weight or #2 fuel oil with a sulfur content not to exceed 0.5% by weight.

B. Emissions from Boiler #4 shall not exceed the following:

Pollutant	lb/MMBtu	lb/hr
PM	0.12	1.87
PM_{10}	n/a	1.87
SO_2	n/a	11.39
NO_X	n/a	7.02
CO	n/a	0.47
VOC	n/a	0.16

C. Opacity of emissions from Boiler #4 (Stack 18) shall not exceed 30% on a six (6) minute block average basis, except for two (2) six (6) minute block averages in a 3-hour period.

D. Boiler #4 shall vent through Stack #18 which shall be at least 55.75 feet AGL by June 30, 2001.

(19) National Starch shall not exceed the facility fuel use of:

- 704,000 gallons of #6 fuel with a maximum sulfur content of 0.7% by weight, based on a 12 month rolling total.
- 70,000 gallons of #2 fuel with a maximum sulfur content of 0.5% by weight based on a 12 month rolling total.

Compliance for fuel oil use is based on fuel use logs and the percent sulfur documented on purchase records from the supplier.

(20) National Starch shall maintain a log of roof inspections and clean ups, recorded on a biweekly basis, in order to demonstrate adequate housekeeping measures to prevent fugitive visible emissions.

(21) **Fugitive Emissions**

Potential sources of fugitive PM emissions, including material stockpiles and roadways, shall be controlled by wetting with water, with calcium chloride, or other methods as approved by the Bureau of Air Quality, to prevent visible emissions in excess of 10% on a 6 minute block average basis, except for no more than one (1) six (6) minute block average in a 1 hour period.

(22) **General Process Emissions**

Visible emissions from any general process source (process vents, cyclones and baghouses) shall not exceed an opacity of 5% on a 6 minute block average basis, except for no more than one (1) six (6) minute block average in a 1 hour period.

(23) **Annual Emission Statement**

National Starch shall annually report to the Department, in a specified format, fuel use, operating rates, use of materials and other information necessary to accurately update the State's emission inventory (reference MEDEP Chapter 137).

(24) The term of this order shall be for five (5) years from the signature date below.

DONE AND DATED IN AUGUSTA, MAINE THIS DAY OF 2000.

National Starch & Chemical Co.	**)**	**DEPARTMENTAL**
Aroostook County	**)**	**FINDINGS OF FACT AND ORDER**
Island Falls, Maine	**)**	**AIR EMISSION LICENSE**
A-274-71-I-R	**19**	

DEPARTMENT OF ENVIRONMENTAL PROTECTION

BY: _____
MARTHA G. KIRKPATRICK, COMMISSIONER

PLEASE NOTE ATTACHED SHEET FOR GUIDANCE ON APPEAL PROCEDURES

Date of initial receipt of application: June 19, 1998
Date of application acceptance: June 29, 1998

Date filed with Board of Environmental Protection:_____

This order prepared by Mark E. Roberts, Bureau of Air Quality